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10/700,068

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Mina Farr

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EXAMINER

MARTINEZ, JOSEPH P

ART UNIT

PAPER NUMBER

2873

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/700,068

Applicant(s)

FARR, MINA

Examiner

Joseph P. Martinez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 11-17, 22-28, 33 and 34 is/are rejected.
- 7) ☒ Claim(s) 7-10, 18-21 and 29-32 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6, 11, 13-15, 22-25, 28 and 33 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Nakatsu et al. (5031991).

Re claims 1, 13 and 23, Nakatsu et al. teaches for example in figs. 3b and 3c, an optical device, an optical system for focusing an optical beam into an input face of an optical fiber (6) or a method of focusing an astigmatic optical beam (col. 5, ln. 38-40) comprising: an optical source (5) for producing an optical beam having spaced apart first and second focal points of origin in orthogonal first and second planes of beam propagation of the optical beam (col. 2, ln. 30, wherein the office interprets “elliptic far field pattern” to teach the claimed limitation), respectively; a first lens (10) disposed in an optical path of the optical beam and having a first optical focusing power in both the first and second planes of beam propagation (col. 5, ln. 52-54, and col. 5, ln. 30-38), wherein the first lens is disposed at a first distance (where the office interprets where 10 is placed to disclose a first distance) from the first focal point of origin for generally collimating (col. 5, ln. 52-54, and col. 5, ln. 30-38) the optical beam in the first plane of beam propagation and for focusing (col. 5, ln. 52-54, and col. 5, ln. 30-38) the optical beam down to a first beam diameter in the second plane of beam propagation at an image

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position located a second distance (where the optical beam meets 6) from the first lens; and a second lens (20) disposed in the optical path of the optical beam and having a second optical focusing power in the first plane of beam propagation and generally no optical focusing power in the second plane of beam propagation (col. 5, ln. 54 and col. 5, ln. 40-50), wherein the second lens is disposed at a third distance (where the office interprets where 20 is placed to disclose a third distance) from the image position for focusing the optical beam down to a second beam diameter in the first plane of beam propagation at the image position (col. 5, ln. 54 and col. 5, ln. 40-50).

Re claims 2, 14 and 24, Nakatsu et al. further teaches for example, the first and second beam diameters are substantially equal to each other (col. 2, ln. 32).

Re claims 3, 15 and 25, Nakatsu et al. further teaches for example, at the image position, the optical beam has a numerical aperture in the first plane of beam propagation that is substantially equal to that of the beam in the second plane of beam propagation (col. 2, ln. 31, wherein the office interprets “spherical wave” to disclose the claimed limitation).

Re claims 6 and 28, Nakatsu et al. further teaches for example in figs. 3b and 3c, an optical fiber (6) having an input end disposed at the image position for receiving the optical beam.

Re claims 11, 22 and 33, Nakatsu et al. further teaches for example in figs. 3b and 3c, the second lens is a cylindrical lens (col. 5, ln. 32-33).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 4-5, 16-17 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakatsu et al. (5031991) in view of Pillai (6212216).

Re claims 4-5, 16-17 and 26-27, Nakatsu et al. teaches the optical device, optical system for focusing an optical beam into an input face of an optical fiber or a method of focusing an astigmatic optical beam as disclosed above, including first and second focal lengths (f_1 and f_2 , col. 5, ln. 60 and 65).

But, Nakatsu et al. fails to explicitly teach the first distance is substantially equal to the first lens focal length or the third distance is substantially equal to the second lens focal length.

However, within the same field of endeavor, Pillai teaches for example, varying the position and focal length of the lenses (col. 7, ln. 37-42).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Nakatsu et al. with the teachings Pillai to have the first distance be substantially equal to the first lens focal length or the third distance be substantially equal to the second lens focal length in order to provide an astigmatically corrected circular beam with waist size equal to the fiber spot size, as taught by Pillai.

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2. Claims 12 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakatsu et al. (5031991) in view of Anthon (6125222).

Re claims 12 and 34, Nakatsu et al. teaches the optical device, optical system for focusing an optical beam into an input face of an optical fiber or a method of focusing an astigmatic optical beam as disclosed above, including for use with a semiconductor laser.

But, Nakatsu et al. teaches fails to explicitly teach the optical source is a master oscillator power amplifier having a diode laser portion for generating the optical beam and a planar waveguide amplifier portion for amplifying the optical beam, and wherein the second focal point of origin is located approximately at a location where the optical beam exits the diode laser portion, and the first focal point of origin is located approximately at a location where the optical beam exits the planar waveguide amplifier portion.

However, within the same field of endeavor, Anthon teaches for example in fig. 1, master oscillator power amplifier having a diode laser portion for generating the optical beam and a planar waveguide amplifier portion for amplifying the optical beam (col. 2, ln. 11-13), and wherein the second focal point of origin is located approximately at a location where the optical beam exits the diode laser portion, and the first focal point of origin is located approximately at a location where the optical beam exits the planar waveguide amplifier portion (wherein the office interprets the claimed features of the master oscillator power amplifier to be well known in the art).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Nakatsu et al. to include the master oscillator

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power amplifier of Anthon in order to provide high beam quality in the slow axis, as taught by Anthon (col. 2, ln. 11-13).

Allowable Subject Matter

Claims 7-10, 18-21 and 29-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art taken alone or in combination fails to anticipate or fairly suggest the limitations of the claims, in such a manner that a rejection under 35 USC 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed features as presented in dependent claims 7, 9, 18, 20, 29 and 31.

Specifically regarding claims 7, 18 and 29, Nakatsu et al. teaches the state of the art of optical coupling devices.

But, Nakatsu et al. fails to explicitly teach the optical beam incident upon the first lens has a second numerical aperture in the second plane of beam propagation; the optical fiber has an acceptance numerical aperture associated therewith; the first and second focal points of origin are separated by a fourth distance; and the second numerical aperture divided by the acceptance numerical aperture is substantially equal to or less than the second distance divided by the sum of the first focal length and the fourth distance, as claimed.

Specifically regarding claims 9, 20 and 31, Nakatsu et al. teaches the state of the art of optical coupling devices.

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But, Nakatsu et al. fails to explicitly teach the optical beam incident upon the first lens has a first numerical aperture in the first plane of beam propagation; the optical fiber has an acceptance numerical aperture associated therewith; and the first numerical aperture divided by the acceptance numerical aperture is substantially equal to or less than the second focal length divided by the first focal length, as claimed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph P. Martinez whose telephone number is 571-272-2335. The examiner can normally be reached on M-F 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM
9-1-04



Hung Xuan Dang
Primary Examiner